CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 90-026

WASTE DISCHARGE REQUIREMENTS FOR:

WITCO CHEMICAL CORPORATION
U. S. PEROXYGEN DIVISION
RICHMOND, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Board), finds that:

1. Witco Chemical Corporation, U. S. Peroxygen Division (hereinafter the discharger), by Report of Waste Discharge dated December 3, 1986 has applied for waste discharge requirements and a permit to conduct groundwater cleanup and post-closure maintenance activities.

2. The discharger's facility is located at 850 Morton Avenue in the City of Richmond and occupies about 8 acres in an industrial area (Figure 1). The neighboring facilities are Reaction Products to the northwest; Atlas Foundry to the northeast; Beazer Materials and Services to the southeast and Dennison-Eastman Printing to the south. West side of the discharger's facility is bordered by Southern Pacific's railroad track and a gasoline and diesel pipeline going in the south/north direction. Beyond the railroad track to the west is seasonal wetland and San Pablo Bay.

3. The discharger is currently governed by the Board Order No. 84-78, an NPDES Permit prescribing waste discharge requirements for stormwater runoff.

4. FACILITY DESCRIPTION The discharger manufactured polymerization initiators for the production of plastics, and benzoyl peroxide. The manufacturing operations were ceased on December 31, 1989. The manufacturing processes produced an aqueous alkaline wastewater containing hazardous constituents which was neutralized on site prior to being discharged into sewer system. From 1957 to 1984, process wastewaters were collected in Surface Impoundment 2, neutralized, filtered and discharged to Surface Impoundment 1 before being discharged to the sanitary sewer. Impoundment 1 and west cell of Impoundment 2 were removed from service in 1983; and the east cell of Impoundment 2 was phased out in November 1984. The impoundments were replaced by above ground storage tanks.

5. POND CLOSURE The sludges and soils were excavated from both impoundments in 1985. The impoundments were filled and capped in 1986. Both impoundments have been certified closed by the State Department of Health Services (DHS) in September 1987 in accordance with a closure plan approved by Board staff. The impoundments are now under 40 CFR 265 post-closure conditions and must be monitored according to these conditions until post-closure permit is issued by DHS.

6. REGULATORY STATUS The discharger submitted RCRA Part A application to the

U.S. Environmental Protection Agency (EPA) in November 1980. Subsequently, DHS issued an Interim Status Document to the discharger in April 1981. In addition, the impoundments are also subject to Toxic Pits Cleanup Act of 1984 and the required Hydrogeological Assessment Report (HAR) was submitted in 1987. Three private water wells located north of the facility were identified in the HAR. The discharger surveyed and reported that all three wells were installed during droughts for irrigation usage and have not been used since 1980. A Comprehensive Groundwater Monitoring Evaluation (CME) was conducted in August 1988 by a task force of staff from the Board and DHS. The CME identified several deficiencies. Tasks, to correct these deficiencies identified in the CME, with compliance schedules, will be established in a Consent Agreement and Order (CAO) between DHS and the discharger. This Board Order will address some of those violations and will, to the maximum extent feasible, coincide with the compliance schedules in the proposed CAO.

7. HYDROGEOLOGY The upper 65 feet of the site has been investigated. Two primary water bearing zones have been identified. These two zones are composed of primarily sand with varying amounts of silt and clay. The upper zone occurs between the depth of 5 and 30 feet below the ground surface, is extensive throughout the site, and is usually about 10 feet thick. The hydraulic conductivity of the upper (shallow) zone ranges from 0.06 to 0.6 feet/day. The upper zone appears to thicken toward the west. The shallow zone is underlain by a sequence of clay and silt averaging 10 feet thick, which pinches out toward the west. The deeper sand unit is encountered between about 30 to 45 feet below the ground surface, and ranges in thickness from 20 to 40 feet. The hydraulic conductivity of the deeper zone ranges from 2.4 to 9.7 feet/day. The shallow and deep water-bearing zones appear to be hydraulically connected at the western boundary of the discharger's facility.

8. GROUNDWATER INVESTIGATION A total of 26 groundwater monitoring wells and a piezometer were installed to determine the groundwater elevation and the rate and extent of waste migration. Twenty-one wells have been routinely sampled. Four waste plumes have been identified in the groundwater. Tetrahydrotetramethylfuran (THTMF) and other alteration products plumes such as acetone and benzene originating from the waste discharged to the impoundments have been identified in the vicinity of the impoundments and have migrated west and northwest. Additional groundwater exploration is needed to delineate the western boundary of the THTMF and other alteration products plumes. THTMF concentration up to 4000 ppb was reported. Concentrations of acetone and benzene up to 7000 and 3600 ppb, respectively, were reported in groundwater samples taken immediately downgradient of Impoundment No. 2. A xylene plume has been identified in the southeast corner of the discharger's facility at the border of Beazer Materials and Services. There were reported incidents of xylene spills and illegal discharges on the Beazer's property and the discharger reported that xylene has never been used in their manufacturing processes. Xylene concentration up to 2600 ppb was reported. Solvent plumes including trichloroethylene (TCE), 1,1,1 and 1,1,2 trichloroethane (TCA), 1,1 dichloroethylene (DCE), 1,1 dichloroethane (DCA), trans-1,2 DCE, vinyl chloride, chloroform and diethylether have been identified to the northwest of the discharger's facility with the highest concentrations (5100 ppb of TCE, 1100 ppb of DCA) found in the northwest corner on the property of the neighboring Reaction Products, Inc.

9. An industrial well which is screened from 20 to 192 feet below ground surface may act as a conduit for contaminants to reach the deeper aquifers. A work plan for destruction of the industrial well was submitted and approved in August 1989. Well destruction has been scheduled for the first part of 1990.

10. The discharger submitted a groundwater remediation plan in May 1987. The plan was approved and the discharger initiated a pump test in September 1988 as the first step of the remediation. The remediation consists of extraction and direct discharge of the groundwater to the sewer system for treatment at West Contra Costa Sanitary District's treatment plant. The extraction system will be modified as necessary to capture the waste plumes.

11. Eleven piezometers were initially installed along with the first 8 groundwater monitoring wells at the discharger's facility. These piezometers still exist but are not being used. The discharger will evaluate the suitability of these piezometers for plume characterization and compliance monitoring.

12. A RCRA Facility Assessment (RFA) report was issued by EPA in March 1989. A total of 40 Solid Waste Management Units (SWMUs) and 6 Areas of Concern (AOCs) were identified (Figure 2) in the RFA report. Fifteen of the 40 SWMUs and 2 of the 6 AOCs are of high or undetermined potential releases of hazardous wastes or constituents to the subsurface. There were documented releases of hazardous wastes or constituents to the subsurface from SWMUs Nos. 1,3,8,10 (wastewater sumps), 20,25 (TPCA Impoundments) and 28 (drum storage area) of which SWMUs Nos. 20 and 25 were certified closed. Units for which the potential releases to the subsurface cannot be determined are SWMUs Nos. 2,5,9,11,12,13 (wastewater sumps), 26 (drum rinse area), 29 (burn test pit) and AOCs Nos. 1 (spill areas in production buildings) and 5 (benzoyl chloride bulk unloading stations). However, evidence of spillage such as stained concrete/soil, eroded concrete and stagnating water was noted.

13. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. This Order implements the water quality objectives for San Pablo Bay as stated in the Basin Plan.

14. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:

    a. Domestic supply;
    b. Industrial process and service supply; and
    c. Agricultural supply.

15. The existing and potential beneficial uses of the San Pablo Bay are:

    a. Industrial Service Supply
    b. Navigation
    c. Water Contact Recreation
    d. Non-Contact Water Recreation
    e. Ocean Commercial and Sport Fishing

f. Wildlife Habitat
g. Preservation of Rare and Endangered Species
h. Fish Migration
i. Fish Spawnings
j. Shellfish Harvesting
k. Estuarine Habitat

16. The action to prescribe waste discharge requirements for groundwater cleanup and post-closure maintenance activities is exempt from the California Environmental Quality Act (Public Resources Code Section 21000 et. seq.) in accordance with Section 15308 of the California Code of Regulations entitled "Actions by Regulatory Agencies for Protection of the Environment".

17. The discharger and interested agencies and persons have been notified of the Board's intent to prescribe requirements for the discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.

18. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS **HEREBY ORDERED** that the U. S. Peroxygen Division, Witco Chemical Corporation, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder, shall comply with the following:

A. Prohibitions

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. Specifications

1. The storage, handling, treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The discharger shall conduct site investigation, monitoring, and remediation activities as needed to define the current local hydrogeologic conditions, to define the lateral and vertical extent of soil and groundwater pollution, and to remediate soil and groundwater pollution. Should monitoring results show evidence of pollutant migration, additional characterization and remediation of pollutant extent may be required.

3. Final cleanup levels and goals for polluted soil and groundwater, onsite and offsite, shall be background levels, according to the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" if feasible, or the levels shall be based on an evaluation of the cost, effectiveness and a risk assessment to determine affect on human health and the environment, and shall be approved by the Board. These levels shall have the goals of reducing the mobility, toxicity, and volume of pollutants.

4. Pursuant to Sections 2580 and 2597 of Subchapter 15, Title 23, California Code of Regulations (23 CCR), the discharger shall continue to comply with the applicable standards for waste containment and precipitation and drainage controls in Article 4 of Subchapter 15, 23 CCR and the monitoring program requirements in Article 5 of Subchapter 15, 23 CCR throughout the post-closure maintenance period. The post-closure maintenance period shall extend as long as the wastes pose a threat to water quality.

C. Provisions

1. The discharger shall comply with the Prohibitions and Specifications above, in accordance with the following time schedule and tasks:

TASK/COMPLETION DATE

a. TASK: SUBMIT A TOPOGRAPHIC MAP

The discharger shall submit a topographic map acceptable to the Executive Officer. The map shall be drawn at 2 foot contour interval, on a scale of 1 inch to equal to 200 feet and be based on a ground control survey.

COMPLETION DATE: NO LATER THAN MARCH 31, 1990

b. TASK: SUBMIT A REVISED SAMPLING AND ANALYSIS PLAN

The discharger shall submit a revised Sampling and Analysis Plan acceptable to the Executive Officer.

COMPLETION DATE: NO LATER THAN APRIL 15,1990

c. TASK: EVALUATE THE EXISTING GROUNDWATER MONITORING SYSTEM

The discharger shall submit a technical report acceptable to the Executive Officer evaluating the suitability of the existing groundwater monitoring system for plume characterization and compliance monitoring during and after groundwater remediation. Piezometers and/or monitoring wells that are found unsuitable for serving the aforementioned purposes shall be properly destroyed. A workplan with time schedule for well destruction, if necessary, must be included in the technical report.

COMPLETION DATE: NO LATER THAN APRIL 30, 1990

d. TASK: COMPLETE GROUNDWATER POLLUTION CHARACTERIZATION

The discharger shall submit a technical report acceptable to the Executive Officer documenting additional work needed to define the lateral and vertical extent of groundwater pollution.

COMPLETION DATE: NO LATER THAN APRIL 15, 1990

e. TASK: SUBMIT A POST-CLOSURE PLAN

The discharger shall submit a post-closure plan as set forth in Sections 2580 and 2597 of Subchapter 15, 23 CCR.

COMPLETION DATE: NO LATER THAN MAY 15,1990

f. TASK: COMPLETE IMPLEMENTATION OF INTERIM REMEDIAL ACTIONS FOR THE GROUNDWATER POLLUTION

The discharger shall submit a technical report acceptable to the Executive Officer documenting the implementation of the interim remedial actions, as proposed in the workplan described in Finding 10 of this Order and accepted by the Executive Officer, to remediate the groundwater pollution.

COMPLETION DATE: NO LATER THAN SEPTEMBER 30, 1990

g. 1) TASK: EVALUATE THE EFFECTIVENESS OF THE INTERIM REMEDIAL ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer which evaluates the effectiveness of the interim groundwater remediation system. Such an evaluation shall include, but need not be limited to, an estimation of flow capture zone of the extraction wells, establishment of the cones of depression by field measurements, and presentation of chemical monitoring data.

COMPLETION DATE: NO LATER THAN MARCH 31, 1991

2) TASK: PROPOSE MODIFICATIONS TO THE INTERIM REMEDIAL ACTIONS

Submit a technical report acceptable to the Executive Officer which specifies modifications to the interim remedial actions and proposes an implementation time schedule in the event that the interim groundwater remediation system is demonstrated not to be effective in containing and removing the pollutants.

COMPLETION DATE: NO LATER THAN MARCH 31, 1991

h. TASK: COMPLETE MODIFICATIONS TO THE INTERIM REMEDIAL ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted from Task g.2.

COMPLETION DATE: NO LATER THAN SEPTEMBER 30, 1991

i. TASK: PROPOSE FINAL CLEANUP OBJECTIVES AND ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer that proposes final cleanup objectives and actions for containing the contaminant plumes. This report shall contain the results of the remedial investigation; an evaluation of the installed interim remedial actions; the recommended actions necessary to achieve final cleanup objectives; and the tasks and time schedudle necessary to implement the recommended final remedial actions.

COMPLETION DATE: NO LATER THAN MARCH 31, 1992

j. TASK: COMPLETE IMPLEMENTATION OF FINAL REMEDIAL ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer documenting implementation of final remedial actions as proposed and accepted by the Executive Officer in accordance with Task i.

COMPLETION DATE: NO LATER THAN MARCH 31, 1993

k. TASK: COMPLETE SOIL CONTAMINATION CHARACTERIZATION

The discharger shall submit a technical report acceptable to the Executive Officer proposing characterization and definition of the lateral and vertical extent of soil contamination at SWMUs Nos. 2,5,9,11,12,13,26,29 and AOCs Nos. 1 and 5 and definition of the lateral and vertical extent of soil contamination at SWMUs Nos. 1,3,8,10 and 28.

COMPLETION DATE: NO LATER THAN JUNE 30, 1990

l. TASK: PROPOSE INTERIM SOIL REMEDIAL ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer documenting completion of characterization and definition of lateral and vertical extent of soil contamination at the SWMUs and AOCs identified in Finding 12. This technical report shall also include an evaluation of interim soil remedial actions at SWMUs and AOCs identified in Finding 12.

COMPLETION DATE: NO LATER THAN SEPTEMBER 30, 1990

m. TASK: COMPLETE IMPLEMENTATION OF THE INTERIM SOIL REMEDIAL ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer documenting the implemetation of the interim soil remedial actions as accepted by the Executive Officer.

COMPLETION DATE: NO LATER THAN MARCH 31, 1991

n. 1) TASK: EVALUATE THE EFFECTIVENESS OF THE INTERIM REMEDIAL ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer which evaluates the effectiveness of the interim soil remedial actions.

COMPLETION DATE: NO LATER THAN SEPTEMBER 30, 1991

2) TASK: PROPOSE MODIFICATIONS TO THE INTERIM SOIL REMEDIAL ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer which specifies modifications to the interim soil remedial actions and proposes an implementation time schedule in the event that the interim soil remedial actions are demonstrated not to be effective.

COMPLETION DATE: NO LATER THAN SEPTEMBER 30, 1991

o. TASK: COMPLETE MODIFICATIONS TO THE INTERIM SOIL REMEDIAL ACTIONS

The discharger shall submit a technical report acceptable to Executive Officer documenting completion of the necessary tasks identified in the technical report submitted from Task n.2.

COMPLETION DATE: NO LATER THAN MARCH 31, 1992

p. TASK: PROPOSE FINAL SOIL CLEANUP OBJECTIVES AND ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer that proposes final cleanup objectives and actions for soil remediation. This report shall contain the results of the remedial investigation; an evaluation of the installed interim soil remedial actions; the recommended actions necessary to achieve final cleanup objectives; and the tasks and time schedule necessary to implement the recommended final remedial actions.

COMPLETION DATE: SEPTEMBER 30, 1992

q. TASK: COMPLETE IMPLEMENTATION OF THE FINAL SOIL REMEDIAL ACTIONS

The discharger shall submit a technical report acceptable to the Executive Officer documenting implementation of the final soil remedial actions as proposed and accepted by the Executive Officer in accordance with Task p.

COMPLETION DATE: NO LATER THAN SEPTEMBER 30, 1993

2. The discharger shall notify the Board in writing of any proposed change of ownership or responsibility for post-closure maintenance of the waste management units. This notification shall be given prior to the effective date of the change and shall include a statement by the new discharger that post-closure maintenance will be in compliance with any existing waste discharge requirements and any revisions thereof. The Board shall amend the existing waste discharge

requirements to name the new discharger.

3. If the discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

4. All hydrogeological plans, specifications, reports, and documents shall be signed by or stamped with the seal of a registered geologist, engineering geologist or professional engineer.

5. The discharger shall maintain in good working order, and operate,as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

6. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:

   a. State Department of Health Services/TSCD (Permitting and Enforcement & Surveillance Sections)
   b. State Department of Justice
   c. Contra Costa County Department of Health
   d. U.S. Environmental Protection Agency, Region IX (Waste Compliance Branch, Permits Chief)

7. The discharger shall permit the Board or its authorized representatives, in accordance with Section 13267(c) of the California Water Code:

   a. Entry upon the premises on which wastes are located or in which any required records are kept.

   b. Access to copy any records required to be kept under the terms and conditions of this Order.

   c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.

   d. Sampling of any ground water or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

8. The discharger shall maintain a copy of this order at the site so as to be available at all times to site operating personnel.

9. Technical reports, submitted by the discharger, in compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted to the Board on the schedule specified in the Self-Monitoring Program. These reports shall consist of a letter report that includes the following:

   a. A summary of work completed since submittal of the previous report and work projected to be completed by the time of the next report;
   b. Identification of any obstacles which may threaten compliance with

the schedule of this Order and what actions are being taken to overcome these obstacles;

c. In the event of non-compliance with any Prohibition, Specification or Provision of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order; and,

d. In the first self-monitoring report, an evaluation of the current ground water monitoring system and a proposal for modifications as appropriate.

10. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

11. The discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.

12. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries, contours, or ownership of the disposal areas.

13. The Board considers the property owner and site operator to have a continuing responsibility for correcting any problems within their reasonable control which arise in the future as a result of this waste discharge or water applied to this property during subsequent use of the land for other purposes.

14. These requirements do not authorize the commission of any act causing injury to the property of another or of the public, do not convey any property rights, do not remove liability under federal, state or local laws, and do not authorize the discharge of waste without the appropriate federal, state or local permits, authorizations, or determinations.

15. If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited, or probably will be discharged in or on any waters of the state, the discharger shall report such discharge to the following:

    a. This Regional Board at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m.; and,
    b. The Office of Emergency Services at (800) 852-7550.

    A written report shall be filed with the Regional Board within five working days and shall contain information relative to the following:

    (1) The nature of waste or pollutant;

(2) The quantity involved and the duration of incident;
(3) The cause of spill;
(4) The estimated size of affected area;
(5) The corrective measures that have been taken or planned, and a schedule of these measures; and,
(6) The persons/agencies notified.

16. These requirements do not exempt the discharger from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize this waste disposal site and they leave unaffected any further restraint on the disposal of wastes at this site which may be contained in other statutes or required by other agencies.

17. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Regional Board Basin Plan; or changes in the discharge characteristics.

I, Steven R. Ritchie, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on February 21, 1990.

STEVEN R. RITCHIE
EXECUTIVE OFFICER

Attachments:

Figure 1 - Location Map
Figure 2 - Location of SWMUs and AOCs
Self-Monitoring Program

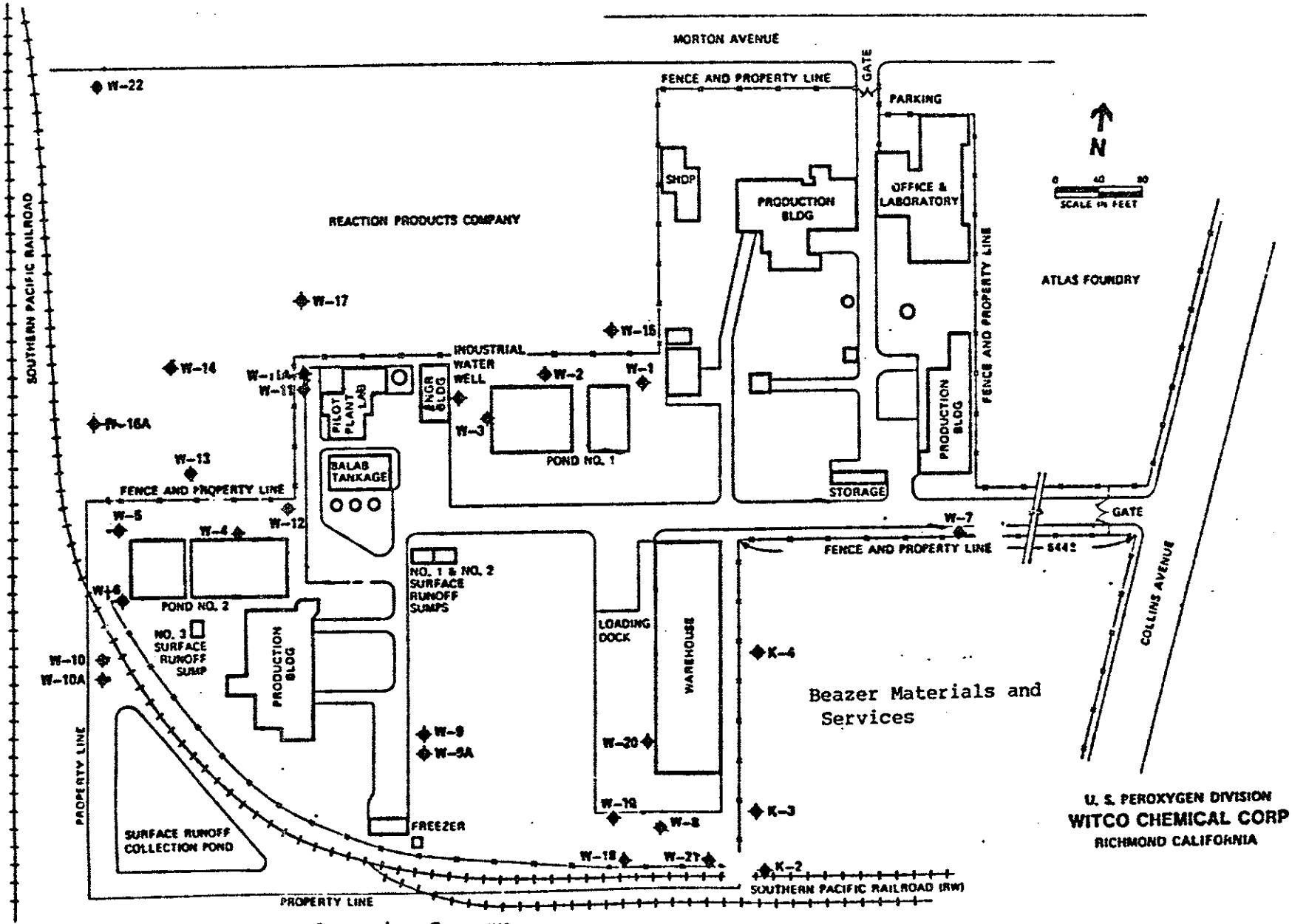

Figure 1 - Location Map

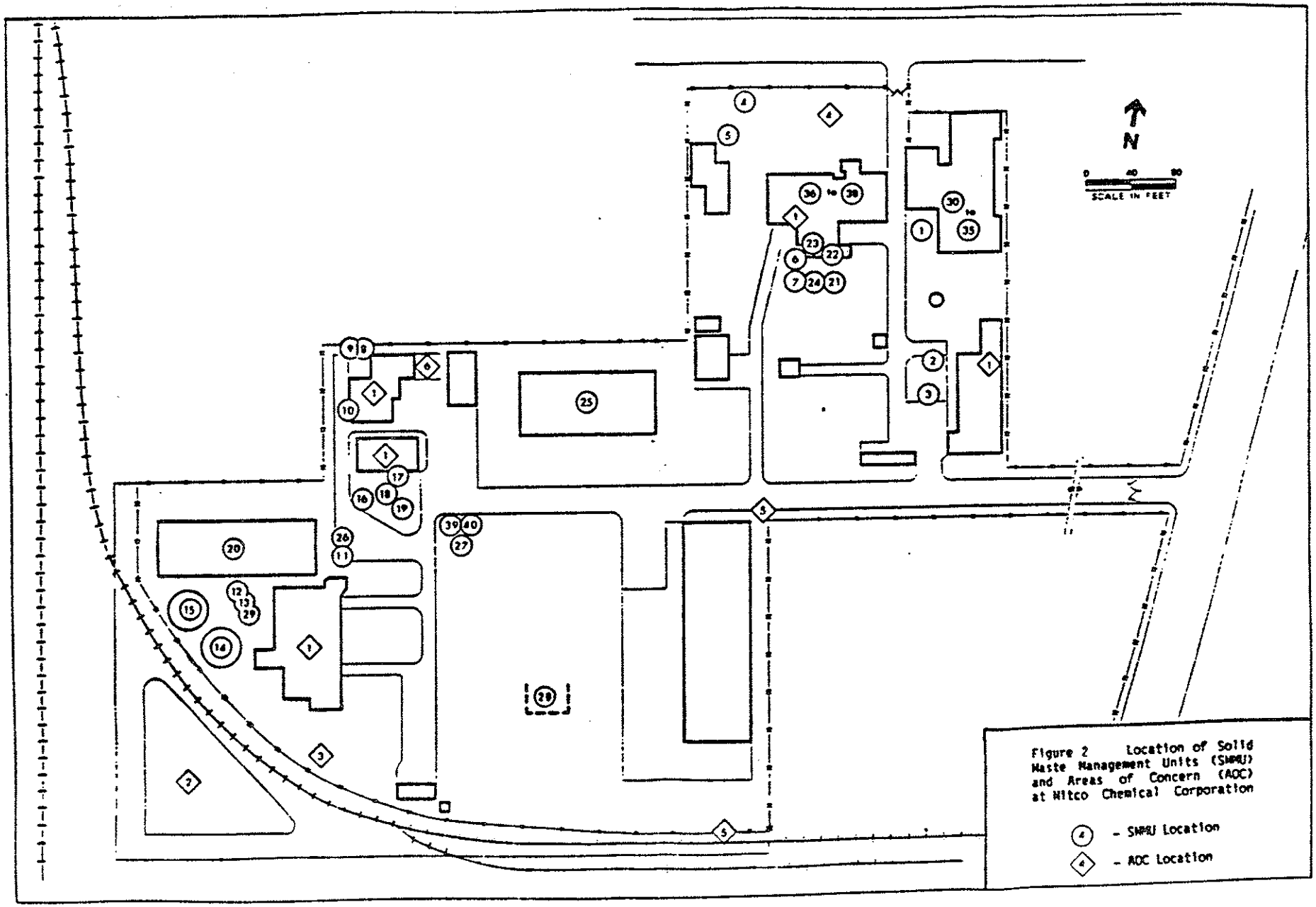

Figure 2 Location of Solid Waste Management Units (SWMU) and Areas of Concern (AOC) at Nitco Chemical Corporation

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

WITCO CHEMICAL CORPORATION

U. S. PEROXYGEN DIVISION

850 MORTON AVENUE

RICHMOND, CONTRA COSTA COUNTY

WASTE DISCHARGE REQUIREMENTS

ORDER NO. 90-026

CONSISTS OF

PART A

AND

PART B

PART A

A. General

1. Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16.

2. The principal purposes of a self-monitoring program by a waste discharger are the following:

   a. To document compliance with waste discharge requirements and prohibitions established by the Board;
   b. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge;
   c. To develop or assist in the development of effluent standards of performance, pretreatment and toxicity standards, and other standards; and,
   d. To prepare water and wastewater quality inventories.

B. Sampling And Analytical Methods

1. Sample collection, storage, and analyses shall be performed according to the most recent version of Standard Methods for the Analysis of Wastewater, and Test Methods for Evaluating Solid Waste EPA Document SW-846, or other EPA approved methods and in accordance with an approved sampling and analysis plan.

2. Water and waste analysis (except total suspended solids) shall be performed by a laboratory approved for these analyses by the State Department of Health. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

3. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. Definition Of Terms

1. A grab sample is a discrete sample collected at any time.

2. Duly authorized representative is either a named individual or any individual occupying a named position such as the following:

   a. Authorization is made in writing by a principal executive officer; or,

   b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general partner in a partnership, sole proprietor in a sole proprietorship, the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall

responsibility for environmental matters for the company.

D. Schedule Of Sampling, Analysis, And Observations

1. The discharger is required to perform sampling, analysis, and observations according to the schedule specified in Part B, and the requirements in Article 5 of Subchapter 15.

2. A statistical analysis shall be performed and reported annually as described in the current revision of Appendix II of Subchapter 15 or by another Board approved method.

E. Records To Be Maintained By The Discharger

1. Written reports shall be maintained by the discharger for ground water sampling and analysis, and shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

   a. Identity of sample and sample station number;
   b. Date and time of sampling;
   c. Date and time that analyses are started and completed, and name of the personnel performing the analyses;
   d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used. A reference to a specific section of a reference required in Part A Section B is satisfactory;
   e. Calculation of results;
   f. Results of analyses, and detection limits for each analyses; and,
   g. Chain of custody forms for each sample.

F. Reports To Be Filed With The Board

1. Written self-monitoring reports shall be filed regularly each quarter within forty-five days from the end of the quarter monitored. In addition an annual report shall be filed as indicated in F.1.g. The reports shall be comprised of the following:

   a. Letter of Transmittal - A letter transmitting the essential points in each self-monitoring report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations, such as, operation and/or facilities modifications. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge

the report is true, complete, and correct. The letter shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

b. Each monitoring report shall include a compliance evaluation summary sheet. Until the Order's amended to specify ground water protection standards, the following shall apply and the compliance sheet shall contain:

(1) The method and time of water level measurement, the type of pump used for purging, pump placement in the well, method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water; and,

(2) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations; the chain of custody record.

A checklist incorporating all the items identified in this section will suffice as a compliance evaluation sheet.

c. A summary of the status of any remediation work performed during that quarter. This shall be a brief and concise summary of the work initiated and completed as follows:

(1) As interim corrective action measures; and,
(2) To define the extent and rate of migrations of waste constituents in the soil and ground water at the site.

d. The discharger shall describe, in the quarterly report, the reasons for significant increases in a pollutant concentration at a well onsite. The description shall include the following:

(1) The source of the increase;
(2) How the discharger determined or will investigate the source of the increase; and,
(3) What source removal measures have been completed or will be proposed.

e. On a semi-annual basis, a map or aerial photograph showing observation and monitoring station locations, and plume contours for each chemical in each aquifer shall be included as part of the quarterly Self-Monitoring Report.

f. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board. The following information shall be provided:

(1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review; and,

(2) In addition to the results of the analyses, laboratory quality control/quality assurance (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis.

g. By March 1 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

(1) Tabular and graphical summaries of the monitoring data obtained during the previous year;
(2) A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements; and,
(3) A written summary of the ground water analyses indicating any change in the quality of the ground water.

2. In the event the discharger violates of threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to:

a. Maintenance work, power failures, or breakdown of waste treatment equipment, or;
b. Accidents caused by human error or negligence, or;
c. Other causes, such as acts of nature.

The discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within 7 working days of the telephone notification. The written report shall include time and date, duration and estimated volume of waste bypassed, method used in estimating volume

and person notified of the incident. The report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring.

In addition, the waste discharger shall promptly accelerate his monitoring program to analyze the discharge at least once every day. Such daily analyses shall continue until such time as the effluent limits have been attained, until bypassing stops or until such time as the Executive Officer determines to be appropriate. The results of such monitoring shall be included in the regular Self-Monitoring Report.

PART B

A. Description Of Observation Stations And Schedule Of Observations

1. The observation stations shall consist of the ground water monitoring wells Nos. 1,2,3,4,5,6,7,8,9,9a,10,10a,11,11a,12,13,14,15,16A,17, and 22.

2. Technical reports on groundwater monitoring shall be submitted on a quarterly basis, according to the schedule below, commencing with the report for the first quarter 1990, due May 15, 1990.

Quarter	1st	2nd	3rd	4th
Period	Jan-March	April-June	July-Sept	Oct-Dec
Due Date	May 15	August 15	November 15	February 15

3. The quarterly reports shall include, but need not be limited to, the following:

(1) Results of groundwater analyses for the groundwater monitoring wells listed using the EPA analytical methods and under the frequency specified, and groundwater pollution plume maps based on these results.

WELLS	METHODS	FREQUENCY
1,3,4,6,11	624,625	Weekly during the first month of extraction and monthly thereafter
2,5,10,12,13,16A,17	624,625	Monthly initially, quarterly after THTMF concentrations have stabilized
7,8,9,9A,10A,11A,14,15,22	624,625	Quarterly

(2) Quarterly updated piezometric surface maps for the two uppermost water bearing zones, based on the most recent quarterly water level measurements for all affected water bearing zones for all onsite and offsite wells.

(3) A cumulative tabulation of volume of extracted groundwater, chemical analysis results for all groundwater extraction wells, pounds of chemicals removed.

B. Observations and Test Procedures

1. The observations shall consist of the following:

a. Water elevation reported to the nearest 0.01 foot for both depth to water from the ground surface and the elevation of the ground water level;
b. Ground water temperature measured at the time of sampling and reported in degrees Farenheit;

c. Ground water conductivity measured at the time of sampling as per Standard Method 205 using potentiometric methodology; and
d. Ground water pH measured at the time of sampling as per Standard Method 423 using potentiometric methodology, and
e. Ground water turbidity observed at the time of the sampling.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program is as follows:

1. Developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 90-026;
2. Effective on the date shown below; and,
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer, or request from the discharger.
4. Developed with the intent to modify the program to reflect the results of the ground water investigation.

Steven R. Ritchie
Executive Officer

February 21, 1990
Date Ordered